

Chairman's Award - Team 3506

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2018 - Team 3506

Team Number

3506

Team Name, Corporate/University Sponsors

UTC Aerospace/Aviation Services/BASF/Microsoft/Ortho Carolina/Hendrick Motorsports/Van Buren Law, PLLC/Framatome/D.R.Joseph Incorporated/Piedmont Natural Gas/Reedy Chemical Foam/Transbotics/Siemens/Empowered/Yara Family/Bank of America/CapTech Consulting/Environmental Pumping/Harris Wall/Womble Dickson Bond/Dezign Werks/Engineering for Kids/Matthew Lineberger, DDS/Hart & Hickman/Siren America/Rex Nord/3D Systems/MidAtlantic Associates&Queen City Robotics Alliance

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2017/2018 year and the preceding two to five years

FIRST continues to inspire our students and mentors. In the past 5 years, 90% of our alumni have gone into STEM fields. Every student on 3506 realizes that FIRST helps them discover their passion for STEM. In the process, the YETI students develop new soft skills and valuable technical skills. These skills motivate students to pursue STEM careers. 3506 empowers students to pursue positions of leadership and to take initiative both inside and outside of FIRST.

Describe the impact of the *FIRST* program on your community with special emphasis on the 2017/2018 year and the preceding two to five years

YETI makes FIRST more prevalent in our community by maintaining the FIRST Zone-CLT. The Zone, is a hub of innovation that provides teams a place to meet and is always full of new students, sponsors, and community leaders who want to learn about FIRST. YETI makes a point to do as many outreach events as possible to share our passion for STEM and FIRST to the community. This year, our STEM outreach event with refugee children was recognized by Code.org and the NCSTA when we won the annual award.

Team's innovative or creative method to spread the *FIRST* message

3506 makes sure that we spread FIRST to all kinds of people. In partnerships with ImaginOn, Urban Ministries and Project 658, we share FIRST and STEM to diverse populations. Our work with ImaginOn engages underprivileged students in STEM by doing STEM-based activities. With Urban Ministries and Project 658, we reach the homeless and refugee communities by donating food and clothing. One of our students also started a STEM nonprofit that got over 600 students in India involved in STEM activities.

Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate

YETI is a founding member of the Queen City Robotics Alliance (QCRA) and a role model for teams all over North Carolina. YETI volunteers for outreach all over NC, volunteers and hosts FLL Jr, FLL and FTC events. YETI holds general robotics, videography, and JAVA classes for all FIRST teams and the public. YETI also helps other FIRST teams through our new web series: YETI Tips. In everything, YETI works to exhibit gracious professionalism and clear communication.

Describe the team's initiatives to help start or form other FRC teams

YETI's rookie year was a challenge with little local support. YETI resolved to help all new local teams. In two years, 2 new FRC teams were established in Charlotte. YETI provided Teams 4290 & 4935 mentor to mentor meetings and team support. More recently, YETI mentored team 6639 in their rookie year and this season YETI started team 6894. Every year QCRA hosts Kick off and open houses at the Zone for parents and sponsors and lets other FRC teams use the field at the end of FRC build.

Describe the team's initiatives to help start or form other *FIRST* teams (including Jr.FLL, FLL, & FTC)

In the past six years, we have started 6 Jr. FLL, 12 FLL and 6 FTC teams. Because a lot of YETI students started FIRST at a young age, we are in a unique position to start teams because we understand the benefits of learning to develop new skills sets at a young age. We continuously pay for the registration of these teams and a many of our students mentor these teams. These younger teams act as feeder teams for Team 3506.

Describe the team's initiatives on assisting other *FIRST* teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the *FIRST* program

YETI has started many younger feeder teams; among those is the Pink Pipeline, a series of all girls JR. FLL, FLL and FTC Teams that are designed to encourage female participation and progression through FIRST programs. We have also created a web series, titled YETI tips, that focuses on how to overcome common financial, mechanical or outreach related issues that teams face on their quest to sustainability.

Describe how your team works with other *FIRST* teams to serve as mentors to younger or less experienced *FIRST* teams (includes Jr.FLL, FLL, FTC, & FRC teams)

Many students currently on YETI started in FIRST, on FLL teams that were started and mentored by YETI, and now they in turn are mentoring and starting FLL teams. So we understand the importance of the connections that the young adult mentors have with the younger students. Currently, many students mentor our feeder FLL and FTC teams located at the zone. We have developed strong relationships with the younger teams in our alliance, and continuously help them to develop their passion for STEM.

Describe your Corporate/University Sponsors

YETI requires every student to fundraise resulting in 30 sponsors annually - broadening team exposure locally. Sponsors include tech firms like Microsoft, BASF, and Transbotics, while Daimler helps with laser jetting parts, as well as small local firms. After enjoying 5 years of a fruitful relationship with Central Piedmont Community College YETI outgrew the space and began looking for a home. Currently, TPM rents space to QCRA for below market rate to help provide space for local FIRST teams.

Describe the strength of your partnership with your sponsors with special emphasis on the 2017/2018 year and the preceding two to five years

Companies continue to have a genuine interest in 3506. BASF and Transbotics have been sponsors for 5 years and others started sponsoring us this season. UTC not only is a team sponsor but also a Zone sponsor. We keep our sponsors updated with weekly newsletters and also invite them to tour the Zone. Every year, we also invite our sponsors to our robot reveal before Stop Build. As our fundraising is student-led, it is the students who develop strong relationships with our corporate sponsors.

Describe how your team would explain what *FIRST* is to someone who has never heard of it

FIRST gives to underserved students across the country as well as around the world an opportunity to be in hands on STEM programs. FIRST is here as a channel to inspire kids to be science and technology leaders and innovators in mentor-based STEM programs. Although it involves building robots, FIRST is more than robots. Robots are a means of teaching life skills that translate into the workforce.

Briefly describe other matters of interest to the *FIRST* judges, if any

This past year, as part of YETI's sustainability goals, YETI looked for organization partners where students can use their FIRST skills on profitable projects. With SIM (Society of Information Management) students built golfing robots for their annual fundraising golf tournament, resulting in \$5000 to QCRA for the Zone. The second was Empowered, an insurance IT firm. Empowered requested a robot for their rebranding and opening of new offices. This resulted in \$1000 towards the team.

Team Captain/Student Representative that has double-checked this submission.

Madeline Yara

Essay

What is YETI?

Eight years ago, YETI was 16 students and 7 mentors who migrated from the snowy mountains to Charlotte (CLT). Following the mission of FIRST, YETI embarked on a journey spreading its love of STEM beyond cultural and economic barriers. YETI is a team whose intensity and drive inspire the creation of environments where students can discover their passion for STEM and become the next generation of excellence. YETI's unique characteristics enabled years of sustainable outreach and leadership by encouraging, collaborating and empowering their global and local community.

YETI is Enthusiastic

Just as a snowball hurtles down the side of a snow-covered mountain, YETI's initiative to increase STEM involvement rapidly gained momentum and size. YETI accomplished this by displaying robots at community events to garner local interest and inspire people to join STEM activities. Some of these events include Geek Fest, Telugu Assoc. events, Wilson's World, News Rising TV show, and the Microsoft Non-profit fair. YETI worked with CLT Intl. Airport, Carolinas Aviation Museum (CAM), Schiele Museum and iMake CLT. At events, YETI teaches students how to drive blue, furry robots sparking their own passion for STEM. YETI builds custom robots showcasing the entrepreneurial benefits of FIRST. Examples include: golfing robot for the SIM golf tournament and a ribbon cutting robot for the Empowered opening ceremony. Not only demonstrating YETI's appreciation for sponsors, these actions inspired SIM's \$5000 contribution to QCRA.

YETI is Welcoming

YETI's snowstorm initiative to inspire and welcome people across borders is fondly referred to as "Going Global Local." Since 2015, YETI has worked with Project 658, a local refugee support organization, hosting STEM classes and camps for refugee children. YETI created a STEM activity station, ran a winter clothing drive, and a YETI completed his Eagle Scout Project for Proj. 658. Because of YETI's code camp with Proj. 658, YETI was awarded the 2017 Champion of Computer Science for Broadening Participation Award by the Computer Science Teachers Assoc. and Code.org. Collaboration with Proj. 658 gave YETI the confidence to overcome language and cultural barriers and work with people from around the world. Expanding on the YETI Global initiative, a YETI student went to India and created an overseas nonprofit STEM education organization. The organization, PREPARE, provides materials like KNEX sets, laptops, projectors, and LEGO Mindstorms EV3 kits to schools in impoverished areas of coastal south India. Over the past two years, this YETI developed a STEM-focused curriculum, traveled to India, and trained teachers at multiple schools. YETI helped fundraise for PREPARE and together they donated nearly \$15,000 worth of materials that has benefitted more than 600 financially disadvantaged students.

YETI is Encouraging

YETI encourages everyone, especially girls, to develop a skill set as elaborate as a snowflake in a wide variety of areas. Currently, there is a shortage of women in STEM careers due to lack of confidence and encouragement. YETI works to diminish this lack of female presence by creating and maintaining the Pink Pipeline. The Pink Pipeline is a series of all-girl Jr. FLL, FLL and FTC teams that get young girls interested in engineering. The Pipeline provides a solid base of engineering skills, giving them a leg up in confidence when they reach high school robotics teams and coursework. YETI's current team captains joined because of a Pink Pipeline FTC team. Their interest in STEM even caught the eyes of a film director, filming the documentary, "Pioneers in Skirts". The documentary focuses on our team captains' journey as young women in STEM and the struggles women face when entering the workforce. YETI, of course, has other FIRST "feeder" teams that they mentor and collaborate with to start young community STEM engagement. Many of YETI's students came from the 6 FTC, 12 FLL, and 6 Jr. FLL teams YETI started. YETI has funded these teams since their creation by paying their annual registration fees. YETI has also started 2 FRC teams, one in the '17-'18 season which YETI is consistently mentoring along with 2 other FRC teams in the state. The Pink Pipeline, as well as other FIRST team pipelines, all contribute to the STEM community of FIRST teams.

YETI is Efficient

YETI's efficient team structure is as robust as a glacier, solidifying involvement of members within the team. Mentors are mainly there to promote safety, give advice, and assist, and the true team leaders are the student captains. YETI's co-captains run Mechanical/Controls and Marketing/Finance. The YETI captains hold weekly leadership meetings before every team meeting, and make sure YETI is on track to perform their best. The captains also take part in the development of the products produced by each department. Under the YETI co-captains are four team leads: Mechanical & Safety, Controls, Marketing, and Finance. The leads, with help of the two team captains, evenly distribute work. Leadership ensures all team members know their responsibilities and have the skill set to complete their assignments. YETI veterans are there to guide rookies. If a student is unsure how to use a tool or complete a project, a veteran teaches them so a mentor isn't needed. An important component within the team structure is the ability for veteran YETI members to move up in rank. YETI has a process of interviews for veterans interested in leadership. The interviews determine work ethic, soft skills, and dedication to ensure all leaders have a passion for FIRST. YETI inspires their team members to grow and become leaders in engineering while developing skills which they can apply in any field.

YETI is Collaborative

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YETI has always felt that it is important to build connections with other teams to create a blizzard of FIRST in CLT. The FIRST Zone was created by the Queen City Robotics Alliance, an organization YETI helped create to connect CLT's FRC teams. QCRA consists of team 4935 T-rex, 4290 Bots of War, and of course, 3506 YETI. All QCRA teams working at the Zone contribute towards paying for the zone, and at competition, each team proudly bears their QCRA logo on their robot and t-shirts. All of YETI's current feeder teams fall under QCRA, and YETI utilizes the FIRST Zone's resources to provide the best assistance possible. In recent years, YETI has made it a point to guide or start a rookie FRC team each year in CLT. This year, YETI started rookie team 6894, Iced Java, and helped with their registration, recruiting, writing grants, tool training, and the shared work space.

YETI requires students to complete 10 hours of outreach and participate in at least 3 events prior to build season. With many of the students going above and beyond the requirements, YETI ensures that their presence is felt in the community. Annually QCRA hosts Robostock (FLL Scrimmage), 2 FLL Jr. Expos, an FLL tournament and an FTC tournament and YETI students regularly volunteer at each event as referees, judges, scorekeepers, etc. Additionally, annual STEM classes and camps are held within the FIRST Zone, taught by YETI students and mentors. Outside of FIRST, YETI partnered with Queen's Univ. Chinese Robotics Camp and is contracting with CAM to provide STEM camps in the summer of 2018.

YETI is Sustainable

A key YETI goal is to ensure that their team and QCRA remain as sustainable as an arctic winter. To do this, YETI maintains strong relationships with corporate sponsors. Students on YETI are required to contact sponsors every year, usually resulting in over 30 sponsors annually. Students develop soft skills by learning to communicate clearly, effectively, and with gracious professionalism to these sponsors. Team leadership creates phone scripts and email outlines to guide students in their endeavors. Money raised goes towards tuition and funds outreach projects like our non-profit in India, sponsoring FLL teams at Title 1 schools, and hosting coding camps with Proj. 658. Students engage companies by emailing YETI robot videos, inviting potential sponsors to the FIRST Zone, or presenting at corporate headquarters. Major sponsors include UTC, Microsoft, BASF and small local companies. Many of YETI's corporate sponsors donate proudly every year. The Queen City Robotics Alliance, a 501(c)(3) nonprofit organization, holds the funds collected putting QCRA and YETI in a powerful place to co-sponsor any FIRST team in the alliance.

YETI is Determined

YETI's drive and determination to help others succeed is the foundation of the new plan to spread a snowfall of FIRST and STEM knowledge. YETI gathers important tips about all aspects of FRC from mechanical to marketing, and shares these tips with the FIRST community through a web series titled YETI Tips. The purpose of YETI Tips is to guide new FRC teams to a sustainable future; growing and developing as YETI did. YETI Tips is a collection of 3-5 minute videos emphasizing important points each team needs to be successful. The quick videos make it easy for teams to learn the basics of creating a sustainable FIRST team and also gives YETI an opportunity to expand on topics as needed. YETI strives to ensure that every team, anywhere in the world is successful, by sharing how to build a robot, securing team funding, branding, or submitting for awards.

YETI is Not a Myth!

YETI believes in connecting people around the world through shared love and celebration of STEM. YETI continues to expand, diversify and empower the community by introducing them to the intriguing ideas of FIRST. YETI learns from mistakes becoming stronger every year, acquiring knowledge by collaborating and sharing experiences with other FIRST teams while focusing on solidifying sustainability of FIRST in CLT. Team YETI and their welcoming, enthusiastic, environment exemplify dedication to FIRST and spreads STEM locally and globally.